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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Tracey BROWN Group Art Unit: 1615

Serial No.: 09/889,203 Examiner: B. M. Fubara

Filed: March 13, 2002 Atty. Dkt. No.: 650064.406USPC

For: A COMPOSITION AND METHODS FOR THE ENHANCEMENT OF THE EFFICACY OF DRUGS

INVENTOR'S DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 23313-1450

I, Dr Tracey Brown, do declare as follows:

1. I am an inventor on the above-captioned application. I reside at **23 Norwood St, Flemington, Victoria, Australia** and I am a citizen of Australia. I have attached my Curriculum Vitae as Exhibit A.

2. I have conducted various experiments designed to establish the relationship between hyaluronic acid (HA) at molecular weights greater than or equal 750 kDa and less than 750 kDa and the efficacy of different HA molecular weights with chemotherapeutic agents.

3. In the first experiment, a colon cancer cell line (LIM 1215) was tested for its susceptibility to low (35 KDa, 220 kDa, 420 kDa) and high (750 kDa, 880 KDa and 1429 KDa) molecular weight HA at varying concentrations of 5-Fluorouracil. The experiment was performed with both low (3.3μg/ml) and high (86 μg/ml)

concentrations of HA. After 3 days, the HA preparations were compared for their anti-cancer properties, and it was apparent that HA of greater ≥750 kDa, at both high and low concentrations of HA, was far more effective than the low molecular weight preparations (see Figures 1 A & B). The molecular weight effect becoming more pronounced as the concentration of 5-Fluorouracil increases. Thus, molecular weights of ≥750 kDa enhance the efficacy of 5-Fluorouracil at both low and high concentrations of HA while the lower molecular weights of less than 750 kDa do not exert a statistically significant effect on the efficacy as demonstrated by the IC_{50} value of 5- Fluorouracil (see Table 1). As the HA concentration increases from 3.33μg/ml to 863μg/ml the 750 and 880 kDa HAs demonstrate equivalent efficacy to the 1429kDa HA. This potentially demonstrates that there is an increase in the tertiary structure entanglement of the HA molecule which results in more efficient drug entrapment and subsequent internalisation.

4. In the second experiment, a colon cancer cell line (LIM 1215) was tested for its susceptibility to low (35 KDa, 220 kDa, 420 kDa) and high (750 kDa, 880 KDa and 1429 KDa) molecular weight HA at a concentration 86μg/ml with varying concentrations of methotrexate. After 3 days, the HA preparations were compared for their anti-cancer properties, and it was apparent that the LIM 1215 cell line is resistant to methotrexate but when combined with higher molecular weight HA (>420kDa) the resistance is overcome where a greater effect is seen at molecular weights of ≥750kDa (Figure 2).

5. The third experiment, a breast cancer cell line (MDA MB 468) was tested for its susceptibility to low (35 KDa, 220 kDa, 420 kDa) and high (750 kDa, 880 KDa and 1429 kDa) molecular weight HA, at a concentration 3.3μg/ml, with increasing concentrations of methotrexate. After 3 days, the HA preparations were compared for their anti-cancer properties, and it was apparent that HA of ≥750 kDa was more effective than the low molecular weight preparations; at higher

concentrations of methotrexate (Figure 3). Thus, molecular weights of ≥750 kDa enhance the efficacy of methotrexate in breast cancer cell lines while the lower molecular weight, less than 750 kDa, does not demonstrate a significant difference as can be seen in Figure 3 and the IC_{50} values in Table 1.

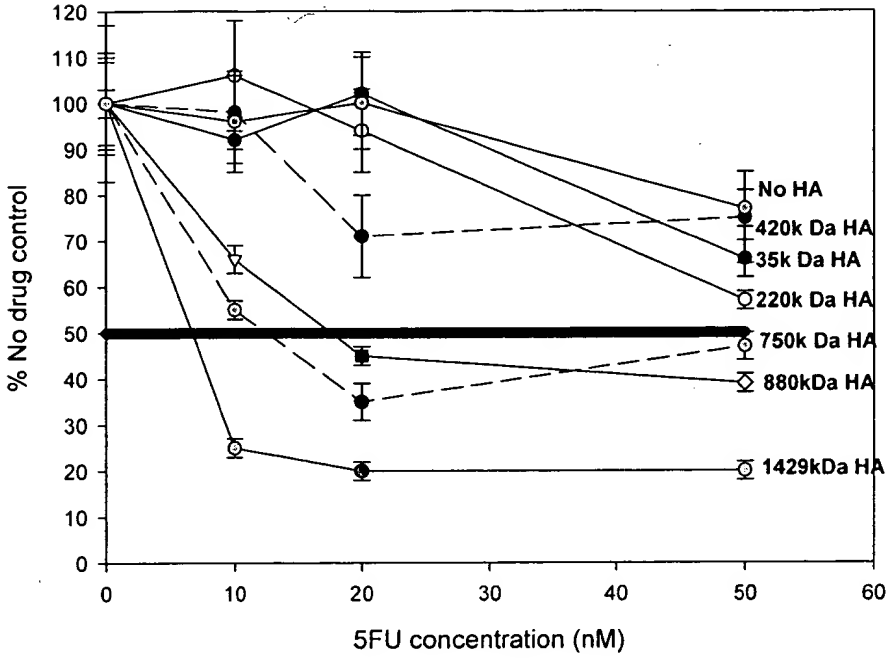
6. I hereby declare that all statements made of my own knowledge are true and all statements made on information are believed to be true and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Dr. Tracey Brown

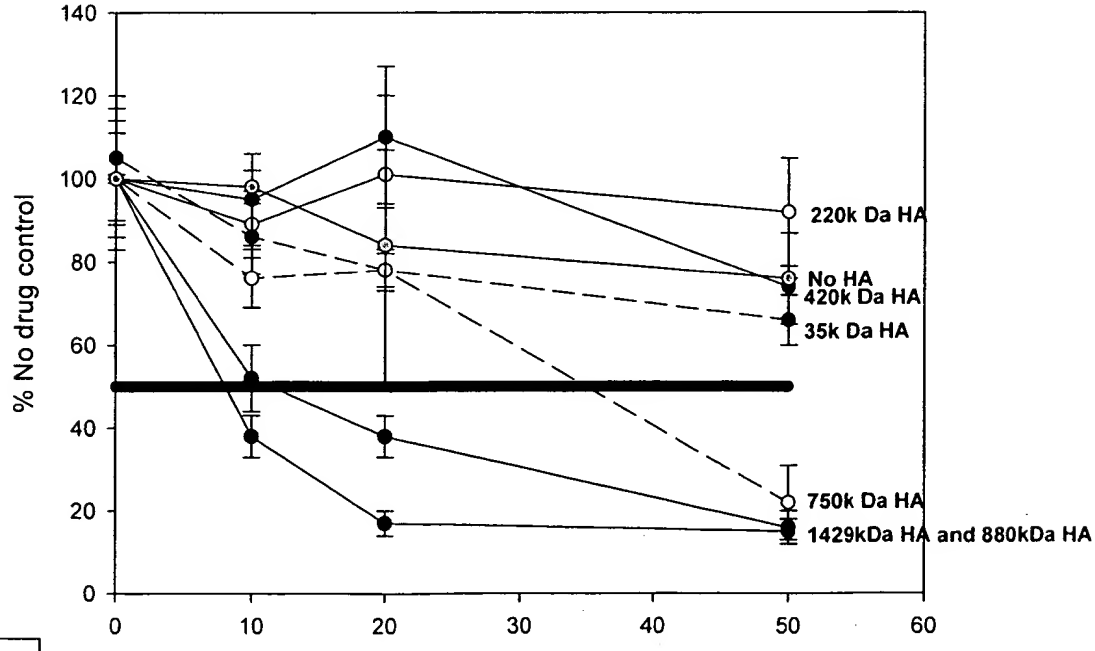
Inventor's Declaration
FIGURES 1 TO 3
&
TABLE 1

A

Effect of 3.3µg/ml of different molecular weight Hyaluronan on the efficacy of 5-Fluorouracil in the treatment of colon cancer cell line LIM1215



Effect of 86µg/ml of different molecular weight Hyaluronan on the efficacy of 5-Fluorouracil in the treatment of colon cancer cell line LIM1215



B

Figures 1 A & B

Effect of 86µg/ml of different molecular weight Hyaluronan on the efficacy of Methotrexate in the treatment of human colon cancer cell line LIM 1215

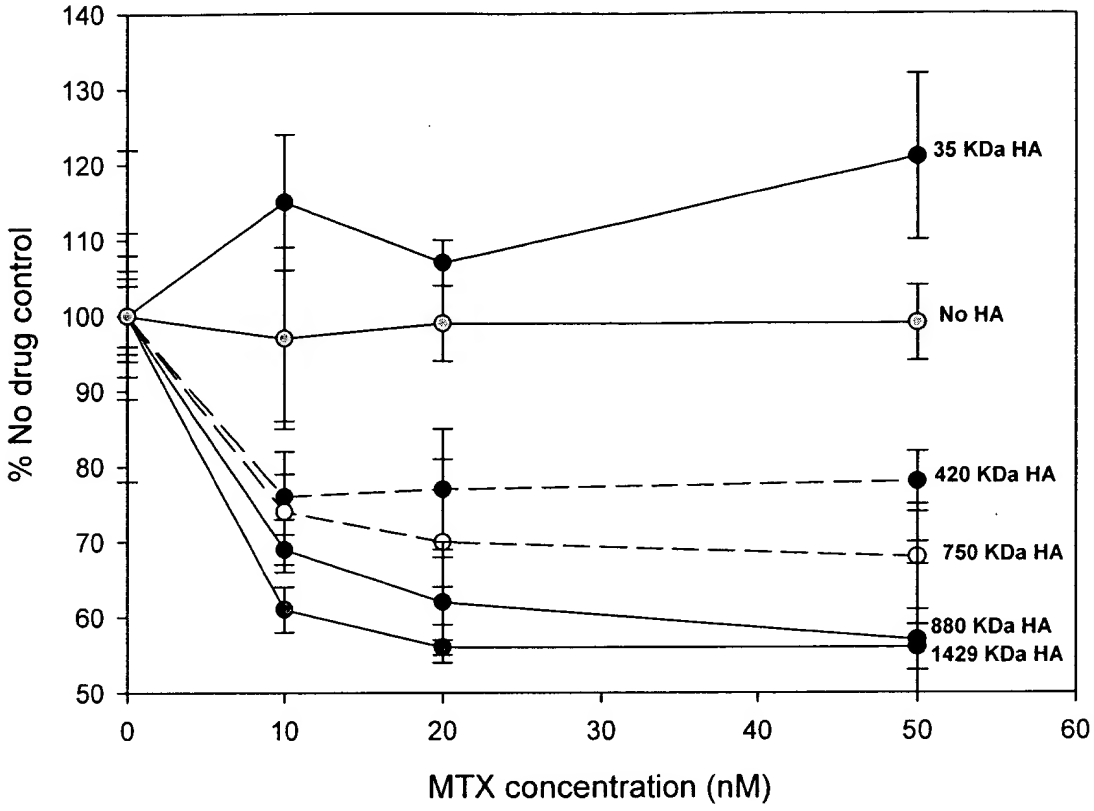


Figure 2

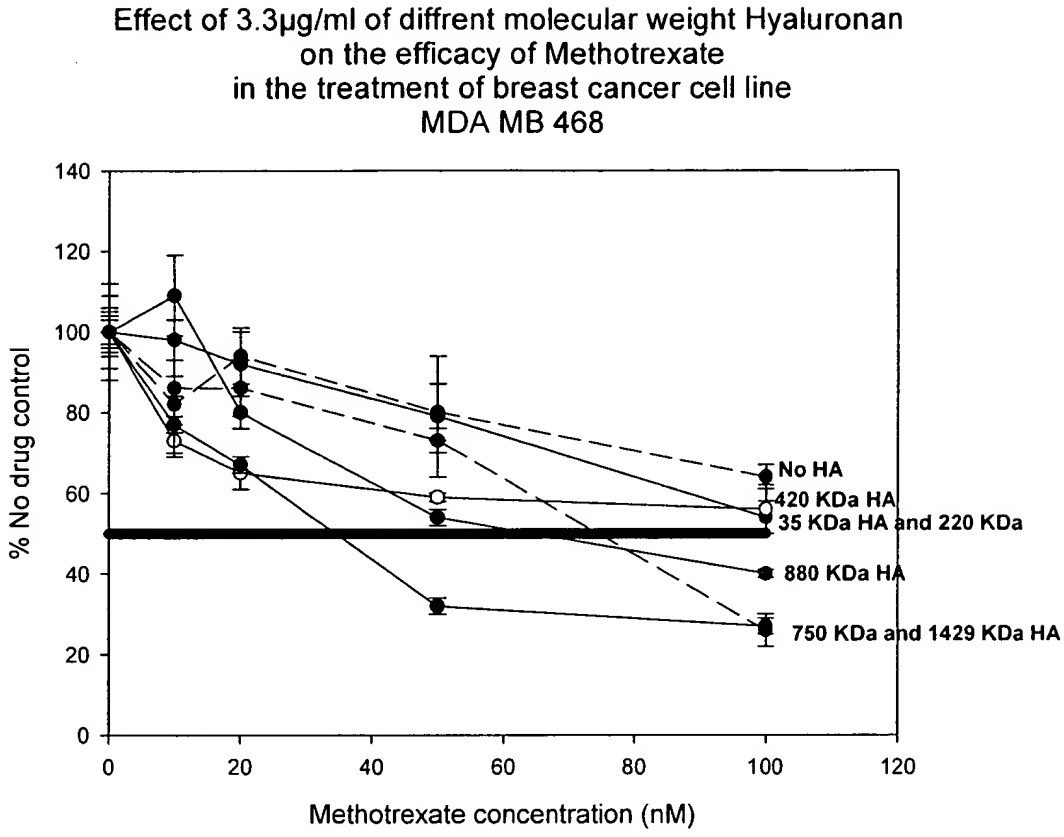

Effect of 3.3µg/ml of diffrent molecular weight Hyaluronan
on the efficacy of Methotrexate
in the treatment of breast cancer cell line
MDA MB 468
% No drug control
Methotrexate concentration (nM)
0
20
40
60
80
100
120
140
No HA
420 KDa HA
35 KDa HA and 220 KDa
880 KDa HA
750 KDa and 1429 KDa HA

Figure 3

Table 1: Cancer cell lines treated with drug chemotherapeutic agents: IC_{50} and IC_{25} values at HA of molecular weights from 25 kDa to 1429 kDa

Cancer Cell Line	Modal molecular weight of HA (K Da)	MTX Treatment			
		No HA (nM)		3.3ug/ml HA (nM)	
		IC_{50}	IC_{25}	IC_{50}	IC_{25}
MDA-MB-468 Breast Cancer cell line	35	>100	64	>100	63
	220	>100	64	>100	63
	420	>100	64	>100	19
	750	>100	64	76	42
	880	>100	64	60	21
	1429	>100	64	36	10

LIM 1215 Colon Cancer cell line	Modal molecular weight of HA (K Da)	5-FU Treatment					
		No HA (nM)		3.3ug/ml HA (nM)		86ug/ml HA (nM)	
		IC_{50}	IC_{25}	IC_{50}	IC_{25}	IC_{50}	IC_{25}
	35	>50	>50	>50	42	>50	32*
	220	>50	>50	>50	38	>50	>50
	420	>50	>50	>50	18	>50	48
	750	>50	>50	12	6	37	22
	880	>50	>50	18	8	11	6
	1429	>50	>50	7	4	8	5

EXHIBIT A

Curriculum Vitae
Dr Tracey Brown

Address for Communication

Associate Professor Tracey Brown
The Laboratory for Hyaluronan Research
Department of Biochemistry and Molecular Biology
Faculty of Medicine
Monash University,
Clayton, VICTORIA 3800
BH: + 61 3 9905 3700: Facsimile: + 61 3 9905 4699
Email:tracey.brown@med.monash.edu.au

Academic Qualifications

1997: Doctor of Philosophy (part-time enrolment)
Thesis Title: The Metabolism of Hyaluronan
Monash University, Department of Biochemistry & Molecular Biology, Melbourne, Australia
1987: Bachelor of Science in Biochemistry
University of R.M.I.T., Melbourne, Australia.

Awards

2003: Finalist Telstra Business Women's Awards: Commonwealth Government Private and Corporate Sector category

1998: Monash Post-graduate Supervisor Award
1997: Monash Post-graduate Supervisor Award
1987: Dux of Biochemistry, University of R.M.I.T, Melbourne, Australia.

ACADEMIC/TEACHING APPOINTMENTS

2002-present: Associate Professor
Monash University, Department of Biochemistry and Molecular Biology.

2001-present: Lecturer in
- Patent Law
- Commercialisation of Basic Research
- Clinical Trials and Ethics

Monash University, Melbourne, Australia

RESEARCH APPOINTMENTS

1998 - present: Research Director of the Hyaluronan Laboratory
Department of Biochemistry and Molecular Biology, Monash University, Melbourne Australia.

1996 - 2001: Research Fellow

	Department of Biochemistry and Molecular Biology, Monash University, Melbourne Australia.
1993 - 1996:	Senior Research Scientist Department of Veterinary Science, University of Melbourne, Melbourne, Australia
1990 - 1993:	Forensic Research Coordinator Office of Chief Medical Examiner of New York City, Department of Forensic Biology, New York, New York. USA
1987 - 1989:	Chief Senior Technical Officer Department of Medicine, University of Melbourne, Australia
1985 - 1986:	Senior Research Assistant Ludwig Cancer Institute, Melbourne, Australia
1982 - 1985:	Research Assistant Department of Medicine, University of Melbourne, Melbourne, Australia

COMMERCIAL APPOINTMENTS

2001 - present:	Research and Development Director Meditech Research Limited, Melbourne, Australia
2000 - present:	Company Director Meditech Research Limited, Melbourne, Australia
1993 - 1999:	Principal Research Scientist Hyal Pharmaceutical Australia Ltd, Sydney, Australia

SCIENTIFIC ADVISORY APPOINTMENTS

1996-2000:	Pre-clinical development consultant TIDB Developments, Perth Australia
1998-2000:	Drug delivery consultant Pacific Biosciences, Perth, Australia.
1991 - 1993:	Forensic consultant Serology and DNA expert witness in homicide or rape investigations outside of New York City.
1991 – 1993:	Consultant R&D immunologist Miragen Corporation, Denver, Colorado, USA

RESEARCH GRANTS AWARDED

Year Awarded	Funding Organisation	Project	Grant Awarded
2005	Commonwealth Government		$2,988,418
2005	Commonwealth Government	Establishing the Australian Tissue Engineering Center	$5,200,000
2005	Meditech Research Limited	Development of the HyACT Technology	$800,000
2004	Meditech Research Limited	Development of the HyACT Technology	$800,000
2003	Australian Research Council and Meditech Research Limited	Development of topical therapeutics	$240,000
2003	Meditech Research Limited	Development of hyaluronan chemosensitising transport technology	$600,000
2003	Monash University Research Fund	Towards a new diagnostic technique. Synchrotron and X-ray studies of cancer induced extracellular matrix changes	$100,000
2002	Meditech Research Limited	Development of hyaluronan – based anti-fungal compounds	$60,000
2002	Meditech Research Limited	Development of hyaluronan chemosensitising transport technology	$640,000
2001	Australian Research Council and Meditech Research Limited	Development of multivalent hyaluronan derivatives therapeutics	$132,000
2001	Meditech Research Limited	Development of hyaluronan chemosensitising transport technology	$640,000
2000	Meditech Research Limited	Development of hyaluronan chemosensitising transport technology	$440,000
1999	Hyal Pharmaceutical Australia	Hyaluronan as a drug delivery vehicle in breast cancer	$357,000
1998	Hyal Pharmaceutical Australia	Overcoming of drug resistance in breast cancer cells	$45,000
1997	Hyal Pharmaceutical Australia	Hyaluronan as a drug delivery vehicle in breast cancer	$40,000
1996	Hyal Pharmaceutical Australia	Effect of hyaluronan on percutaneous absorption of diclofenac	$121,000
1995	Hyal Pharmaceutical	Hyaluronan transdermal drug	$92,000

	Australia	delivery	
1994	Hyal Pharmaceutical Australia	Kidney metabolism of hyaluronan	$70,000
1994	Hyal Pharmaceutical Australia	Identification of hyaluronan dermal receptors	$15,000
1993	Hyal Pharmaceutical Australia	Percutaneous absorption of hyaluronan	$82,000

PUBLICATIONS

PATENTS

Country	Application/ Patent No.	Filing Date	Title
Australia	24231/00	6.1.2000	A composition and method for the enhancement of the efficacy of drugs
Canada	not yet available	6.1.2000	As above
China	00802748.4	6.1.2000	As above
Europe	00902481.1	6.1.2000	As above
Japan	2000-593339	6.1.2000	As above
New Zealand	512676	6.1.2000	As above
Singapore	200104092.1	6.1.2000	As above
Taiwan	89100433	6.4.2000	As above

Country	Application/ Patent No.	Filing Date	Title
Australia	72202/01	13.7.2001	Hyaluronan as a cytotoxic drug, pre-sensitizer and chemo-sensitizer in the treatment of diseases As above
Canada	not yet available	13.7.2001	As above
China	01802357.6	13.7.2001	As above
Europe	01951219.3	13.7.2001	As above
Japan	02-511783	13.7.2001	As above
New Zealand	517359	13.7.2001	As above
United Kingdom	0204331.3	13.7.2001	As above
U.S.A.	10/088,774	13.7.2001	As above

Country	Application/ Patent No.	Filing Date	Title
Australia	2002325635		Improved therapeutic protocols for overcoming treatment side-effects
Canada	2,382,560		As above
China	NA		As above
Europe	02759888.7		As above
Japan	2003-522577		As above
New Zealand	531451		As above
U.S.A.	10/088,774		As above

Country	Application/ Patent No.	Filing Date	Title
Australia	PCT/AU2004/001108		Improved therapeutic protocols in the use of HA with anti-fungals
Canada			As above
China			As above
Europe			As above
Japan			As above
New Zealand			As above
United Kingdom			As above
U.S.A.			As above

Country	Application/ Patent No.	Filing Date	Title
Australia	PCT/AU2004/006658		Modulation of HA synthase[c]
Canada			As above
China			As above
Europe			As above
Japan			As above
New Zealand			As above
United Kingdom			As above
U.S.A.			As above
			As above

Provisional filings

Country	Application/ Patent No.	Filing Date	Title	
USA	60/654920	22/2/2005	Chemoembolisation facilitating compositions	
USA				

PUBLICATIONS

1. Fraser, JRE, Dowling, JPG., Varigos, GA. and Brown TJ. (1986) The rash in Ross River Virus disease in "Arbovirus Research in Australia: Proceedings of 4th Symosium". EDs. TD St. George, BH Kay, J. Blok. Pub. CSIRO-QIMR, Brisbane, Queensland.

2. Dahl, LB., Kimpton, WG., Cahill, RNP., Brown TJ. and Fraser, JRE. (1989) Origin and fate of hyaluronan in amniotic fluid. *J. Devel. Physiol.* Vol. 12, p 209

3. Fraser, JRE., Dahl, B., Kimpton, WG., Brown TJ. and Vakakis, N. (1989) Elimination and subsequent metabolism of circulating hyaluronate in the fetus. *Journal of Devel. Physiol.* Vol. 11, p 2351.

4. *Brown TJ.* Laurent UB. Fraser JR (1991).Turnover of hyaluronan in synovial joints:elimination of labelled hyaluronan from the knee joint of the rabbit. *Experimental Physiology.* 1991. 76(1). 125-134.

5. Gibson PR. Fraser JRE. Brown TJ. Finch CF. Jones PA. Colman JC. Dudley FJ (1992). Hemodynamic and liver function predictors of serum hyaluronan in alcoholic liver disease. *Hepatology.* 15(6). 1054-1059.

6. Brown TJ. Hess J. Shapiro L. Schaler RC .(1993) Pregnancy Protein-SP1: Identification Tool in Forensic Bloodstains. *Can.Soc.Forens.Sci. J.* 26(2). 69-80

7. Brown TJ and Fraser JRE. (1995).Absorption of hyaluronan applied to the surface of the skin. Royal Society of Medicine Press Round Table Series. 40. p32-38.

8. Fraser JR. Brown TJ. and Laurent TC (1997).Catabolism of hyaluronan. In: The Chemistry,Biology and Medical Applications of Hyaluronan and its Derivatives. Chap10. 1-8. Eds. Laurent TC & Balazs EA. Portland Press, London

9. Brown TJ, Alcorn D, Fraser JR. (1999) Absorption of hyaluronan applied to the surface of intact skin. *J Invest Dermatol.* Nov;113(5):740-6. 1

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12. Brown TJ, Kimpton WG, Fraser JRE (2000) Biosynthesis of glycosaminoglycans by the lymph node. *Glycoconjugate Journal.* 17: 795-805

13. McCombe D, Brown TJ, Slavin J, Morrison WA. (2001) The histochemical structure of the deep fascia and its structural response to surgery. J Hand Surg [Br]. 26:89-97.

14. Nilsson SK, Haylock DN, Johnston HM, Occhiodoro T, Brown TJ, Simmons PJ. (2003) Hyaluronan is synthesized by primitive hemopoietic cells, participates in their lodgment at the endosteum following transplantation, and is involved in the regulation of their proliferation and differentiation in vitro. Blood. 101:856-62

15. Udabage L, Brownlee GR, Stern R, and Brown TJ (2004) Inhibition of hyaluronan degradation by dextran sulphate facilitates characterisation of hyaluronan synthesis: an *in vitro* and *in vivo* study. *Glycoconjugate Journal* 20: 461-471

16. Rosenthal MA, Gibbs P, Brown TJ Wong S, Uren S, Ellis A, Li L, Heldin P, Poliviou H and Fox RM (2005) Phase I and pharmacokinetic evaluation of intravenous hyaluronic acid in combination with doxorubicin or 5-fluorouracil. Chemotherapy . 51:132-141

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18. Brown TJ, Hatherell. EM, Falzon JL, Fox RM, Wilson JC, MacLeod AS, Allan P, Savani R & Brownlee GR (2005) Hyaluronan functions as a chemosensitizing transport vehicle in the treatment of human breast cancer. Accepted in Cancer Chemotherapy Pharmacology subject to revisions

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20. Udabage L, Brownlee GR, Waltham M, Blick T, Walker EC, Heldin P, Nilsson SK, Thompson EW, and Brown TJ (2005) Antisense-mediated suppression of hyaluronan synthase 2 inhibits the tumorigenesis and progression of breast cancer. Cancer Res. Jul 65:6139-50

21. Udabage L, Brownlee GR, Nilsson SK, Brown TJ.(2005) The over-expression of HAS2, Hyal-2 and CD44 is implicated in the invasiveness of breast cancer. Exp Cell Res. 310:205-17.

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23. Udabage L, Brownlee G, Nilsson S, Heldin P and Brown T (2005) Antisense-Mediated Suppression of Hyaluronan Synthase 2 Inhibits the Initiation and Progression of Breast Cancer in Hyaluronan: Structure, Metabolism, Biological Activities Therapeutic applications. Editors Balazs EA and Hascall VC. Publisher. Matrix Biology institute, New Jersey, NJ, USA..pp.339-347

24. Shaw S, Haylock D,. Lock R, Bendall, L , Simmons P, Johnston H, Fletcher K, Webb R, Brown T, Liem N and Nilsson S (2005) The Role of Hyaluronic Acid in Normal and Perturbed Hemopoietic Stem Cell Biology in Hyaluronan: Structure, Metabolism, Biological Activities Therapeutic applications. Editors Balazs EA and Hascall VC. Publisher. Matrix Biology institute, New Jersey, NJ, USA.. pp. 293-299

25. Brown TJ, Falzon J, Pho M, Hatherell E, Vaghela V, Wilson j, Fox R, Gibbs P, Rosenthal M, Fraser J, Brownlee G (2005) The Development of Hyaluronic Acid as a Targeted Transport Vehicle for Chemotherapeutic Drugs. in Hyaluronan: Structure, Metabolism, Biological Activities. Therapeutic applications. Editors Balazs EA and Hascall VC. Publisher. Matrix Biology institute, New Jersey, NJ, USA. pp 421-433

26. Allingham P, Brownlee G, Harper G and Brown T (2005) Synthesis of Hyaluronan during Growth and Differentiation of 3T3-L1 Adipocytes in Hyaluronan: Structure, Metabolism, Biological Activities, Therapeutic applications. Editors Balazs EA and Hascall VC. Publisher. Matrix Biology institute, New Jersey, NJ, USA. pp.133-142

27. Allingham P, Brownlee G, Harper G, Pho M, Nilsson S and Brown T (2006)Gene Ecxpression, synthesis and degradation of hyaluronan during differentiation of 3T3-L1 adipocytes. Arch. Biochem. Biophys. 452: 83-91

ABSTRACT PUBLICATIONS

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2. Fraser, JRE., Brown TJ. and Laurent, UBG. (1989) Turnover of hyaluronan in synovial joints: Elimination of labelled hyaluronan from the knee joint of the rabbit. Royal Melbourne Hospital Research Symposium Proceedings, Melbourne , Victoria, Australia and Connective Tissue Society of Australia and New Zealand Symposium", Cairns, Queensland, Australia.

3. Fraser, JRE., Brown, TJ., Deam, D., Cunningham, AL., Cloonan. and Carter, IWJ. (1989) A Study of Synovial Effusions in Ross River Virus Disease. Royal Melbourne Hospital Research Symposium Proceedings, Melbourne , Victoria, Australia.

4. Brown, TJ., Lawrence, V., Shapiro, Harding PJ., Baum, HJ and Schaler, RC (1990) The application of Antibody fingerprinting in forensic serology. Northeastern Association of Forensic Scientists, 16th annual meeting, Providence, Rhode Island and American Academy of Forensic Sciences, Annual meeting", Anaheim, California.

5. Brown, TJ., Shapiro, L. and Shaler, RC. (1991) Individual-specific antibodies as an identification tool. Northeastern Association of forensic Scientists, 17th annual meeting, Huntington, New York.

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7. Fraser, JRE., Laurent, T., Brown, TJ. and Rodén, L. (1990) Metabolic Degradation of Hyaluronan *In Vivo*. 36th Gordan Conference, Birmingham, USA

8. Fraser, JRE., Brown, TJ., Kimpton, WG. and Laurent, UBG (1992) The kinetics of synovial hyaluronan in normal and acvutely inflamed joints. Connective Tissue Society of Australia and New Zealand Symposium, Bali, Indonesia.

9. Brown, TJ. and Fraser, JRE. (1994) Absorption of Hyaluronan Applied to the Surface of the Skin.Connective Tissue Society of Australia and New Zealand Symposium, Warburton, Victoria, Australia.

10. Brown, TJ. and Fraser, JRE. (1995) Movement and absorption of topically applied hyaluronan. in "Proceedings of Biochemistry and Molecular Biology, Monash University.

11. Fraser, JRE, Brown, TJ. and Pierscionek, B.(1995) The Molecular Weight of Hyaluronan Is Reduced in the Blood Stream. in "Proceedings of 19th CTSANZ Conference.

12. Fraser JRE., Brown, TJ., Brownlee, GR., Comper, WD. & Pratt, LD. (1998) Catabolism of hyaluronan by the perfused rat kidney Connective Tissue Society of Australia and New Zealand Symposium, SA, Australia.

13. Brownlee, GR., Brown, TJ., Sutherland, G., Woolatt, E and Fraser, JRE. (1998). Characterisation of a hyaluronan synthase in cutaneous hyaluronosis. Connective Tissue Society of Australia and New Zealand Symposium, SA, Australia.

14. Brown, TJ., Hatherell, EM and Fraser, JRE. (1998) Hyaluronan as a drug delivery vehicle in breast cancer.Connective Tissue Society of Australia and New Zealand Symposium, SA, , Australia.

15. Brownlee GR, Brown TJ and Fraser JRE (2000) Cutaneous expression and distribution of the hyaluronan synthase family in a novel disorder on hyaluronan metabolism. Hyaluronan 2000", Wrexham, Wales during September 2000

16. Falzon J, Snelling H, Fox R, Udabage L, Brownlee GR, Fraser JRE and Brown TJ (2000) Use of hyaluronan as a chemosensitiser in the treatment of human breast cancer *in vitro*. . Hyaluronan 2000", Wrexham, Wales during September 2000

17. Yatawara N, Telbach M, Brownlee GR, Hatherell E, Falzon J, Allan P, Fraser JRE and Brown TJ (2000) Localisation of Hyaluronan Synthase in Human Breast Tumours and Metastatic Tissue. Hyaluronan 2000", Wrexham, Wales during September 2000

18. Brown TJ,. Hatherell E, Falzon J, Wilson J, Allen P, Brownlee GR,. Fox R and Fraser JRE (2000) Hyaluronan as a drug delivery vehicle in breast cancer. Hyaluronan 2000", Wrexham, Wales during September 2000

19. Wilson J,. Brown TJ, Brownlee GR, Hatherall E , Falzon J (2000) A NMR Study of the Nature of the Interaction of Hyaluronan with Cytotoxic Drugs. Hyaluronan 2000", Wrexham, Wales during September 2000

20. Udabage L:, Brownlee GR, Falzon J, Fraser JREand Brown TJ (2000). Role of Hyaluronan in Breast Cancer Cell Cycle and Proliferation. Hyaluronan 2000", Wrexham, Wales during September 2000

21. Hatherell E, Falzon J, Brownlee GR, Mozsolits H, Aguilar M, Fraser JRE and Brown TJ (2000) Effect of hyaluronan on methotrexate uptake and polyagglutamation patterns. Hyaluronan 2000", Wrexham, Wales during September 2000

22. Falzon J, Snelling H, Fox R, Udabage L, Brownlee GR, Fraser JREand Brown TJ (2001) Use of hyaluronan as a chemosensitiser in the treatment of human breast cancer *in vitro*.. . Breast Cancer 2001; Emerging possibilities March 10 & 20, 2001

23. Yatawara N, Telbach M, Brownlee GR, Hatherell E, Falzon J, Allan P, Fraser JRE and Brown TJ (2001) Localisation of Hyaluronan Synthase in Human Breast Tumours and Metastatic Tissue. Breast Cancer 2001; Emerging possibilities March 10 & 20, 2001

24. . Brown TJ, Erin. M. Hatherell, Jeanette Falzon, Jenny Wilson, Prue Allen, Gary Brownlee, Richard M. Fox and Robert Fraser (2001) Hyaluronan as a drug delivery vehicle in breast cancer. Breast Cancer 2001; Emerging possibilities March 10 & 20, 2001

25. Wilson J,. Brown TJ, Brownlee GR, Hatherall E , Falzon J (2001) A NMR Study of the Nature of the Interaction of Hyaluronan with Cytotoxic Drugs. Breast Cancer 2001; Emerging possibilities March 10 & 20, 2001

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28. **Brown TJ**, Snelling H., & Mackay I.R. (2001) The use of Hyaluronan as a transdermal drug delivery vehicle for insulin. Matrix Biology Society of Australia and New Zealand 2001 - Silver Jubilee Meeting October 4-7 2001

29. Allingham P.G., Brownlee G.r. Udabage L., & Brown TJ. (2001) Changes in the espression of Hyaluronan synthase genes during differentiation of 3T3-L1 adipocytes Matrix Biology Society of Australia and New Zealand 2001 - Silver Jubilee Meeting October 4-7 2001

30. MacLeod A., Falzon J.L., Brownlee G.R. & Brown TJ. (2001) Role of CD44 in the uptake of Doxorubicin in breast cancer cells. Matrix Biology Society of Australia and New Zealand 2001 - Silver Jubilee Meeting October 4-7 2001

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